State of Alaska Epidemiology Bulletin

Department of Health and Social Services
Karleen Jackson, Commissioner
Jay Butler, MD, Chief Medical Officer
3601 C Street, Suite 540
Anchorage, Alaska 99503 http://www.epi.Alaska.gov

Division of Public Health
Beverly Wooley, Director
Local telephone number 907-269-8000
24 Hour Emergency 1-800-478-0084

Editors:
Joe McLaughlin, MD, MPH
Bradford D. Gessner, MD, MPH

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Fish Consumption Advice for Alaskans: A Risk Management Strategy to Optimize the Public's Health — Executive Summary

On October 15, 2007, the State of Alaska issued new fish consumption guidance for people who catch and eat fish from Alaska waters. The Recommendations and Reports document, "Fish Consumption Advice for Alaskans: A Risk Management Strategy to Optimize the Public's Health", is available in its entirety at www.epi.alaska.gov/eh/fish/. Requests for printed copies can be made by calling 907-269-8000. The document's Executive Summary is reprinted below.

Benefits of Fish Consumption

Extensive scientific research has documented the numerous health, social, cultural and economic benefits of eating fish. Fish is an excellent source of lean protein, omega-3 fatty acids, antioxidants, and vitamins. A balanced diet that includes fish can lower the risk of heart disease, diabetes, and stroke. Fish is also an important part of a healthy diet for pregnant and nursing women, and young children as the omega-3 fatty acids in fish improve maternal nutrition and brain development in unborn and young children. Furthermore, many Alaska Native people have a strong reliance on fish as part of their traditional way of life and subsistence diet.

Risks of Fish Consumption

Fish can contain environmental contaminants they pick up from the water or sediments they live in, or the food they eat. Concerns about the health risks of contaminants have prompted many states, and several federal agencies, to advise the public to limit consumption of fish. Worldwide, the most notable fish contaminants are mercury and persistent organic pollutants (POPs). Mercury is a toxic metal that can damage the developing brain. Too much mercury may affect how children behave, learn, think and solve problems later in life. Thus, babies in the womb, nursing babies, and young children are at greatest risk for adverse health effects from mercury exposure. National studies have shown that all fish contain some mercury, with varying concentrations based on species, location, age, and other factors. POPs, which include polychlorinated biphenyls, dioxins, and organochlorine pesticides, are a group of toxic chemicals that do not degrade very rapidly in the environment or in the body. Adverse health effects that have been associated with POPs exposure include hormone disruption, learning and behavior changes, immune system suppression, and cancer. POPs exposures from consumption of Alaska fish are very low, and have never been found to cause adverse human health effects.

Monitoring in Alaska

To evaluate the safety of Alaska seafood, the Alaska Department of Environmental Conservation (ADEC) and the Alaska Department of Health and Social Services (DHSS) monitor contaminant levels in fish and in human seafood consumers. ADEC began a comprehensive Fish Monitoring Program in 2001 to analyze a wide variety of chemical contaminants in fish from Alaska, while DHSS began a Statewide Maternal Hair Mercury Biomonitoring Program in July 2002 to monitor the levels of mercury in the hair of pregnant Alaskans. Eligibility for this program has since been expanded to include all Alaskan women of childbearing age.

Monitoring Results

Current data from Alaska's Fish Monitoring Program demonstrate a wide range of mercury tissue concentrations among the 23 species of Alaska fish sampled. Most species of Alaska fish—including all five wild Alaska salmon species—contained very low mercury levels that are not of health concern. However, a small number of Alaska fish species had high enough mercury levels to warrant recommendations for women who are or can become pregnant, nursing mothers, and young children to limit consumption of those fish species.

Of 359 women of childbearing age from 51 Alaskan communities tested as part of Alaska's ongoing Statewide Mercury Biomonitoring Program during 2002–2006, none had hair mercury levels of clinical or public health concern as a result of eating Alaska fish.

Current data from Alaska's Fish Monitoring Program demonstrate that Alaska fish have levels of POPs that are well below a level of health concern for consumers.

Recommendations

Due to the numerous well-documented health (and cultural) benefits of fish consumption, teenage boys, adult men, and women who cannot become pregnant should continue unrestricted consumption of all fish from Alaska waters. Women who are or can become pregnant, nursing mothers, and children aged 12 years and under should continue unrestricted consumption of fish from Alaska waters that are low in mercury, which include all five species of Alaska salmon, pacific cod, walleye pollock, black rockfish, pacific ocean perch, halibut under 20 pounds, and lingcod <30 inches.

To protect the nervous systems of developing fetuses and young children, women who are or can become pregnant, nursing mothers, and children aged 12 years and under should limit their consumption of the fish that are known to have elevated mercury levels according to the following categories:

- Category 1: limit consumption of sablefish, rougheye rockfish, medium-sized halibut (20–39.9 pounds), store-bought halibut, and medium-sized lingcod (30 to 39.9″ length) to ≤ 4 meals per week (or ≤16 meals per month);
- Category 2: limit consumption of medium-large halibut (40 to 49.9 pounds) to ≤3 meals per week (or ≤12 meals per month);
- Category 3: limit consumption of large lingcod (40–44.9″ length), yelloweye rockfish, and large halibut (50–89.9 pounds) to ≤2 meals per week (or ≤8 meals per month); and
- Category 4: limit consumption of salmon shark, spiny dogfish, very large lingcod (45″ and longer) and very large halibut (≥90 pounds) to ≤1 meal per week (or ≤4meals per month).

The fish consumption limitations listed above assume a person eats fish from a single category listed above, and that an adult meal size is 6 ounces. For those who eat multiple fish species, a tool to calculate mixed diet allowances is available at: www.epi.alaska.gov/eh/fish/. Women who are or can become pregnant, nursing mothers, and children aged 12 years and under who consume fish from the categories listed above during a given month may also consume unlimited quantities of fish known to be low in mercury (e.g., salmon) during that month.

Since the average commercially-caught halibut in Alaska weighs only 33 pounds, women who are or can become pregnant, nursing mothers, and children aged 12 years and under may eat up to sixteen meals per month of halibut from Alaska that are sold in stores and restaurants.

Recommendations and guidance on fish consumption will change as new data become available.

(Contributed by Lori Verbrugge, PhD, Environmental Public Health Program)